other source, but there is very little of it in any part of England. Here and there, in the Vale of Aylesbury, in Northamptonshire and the midland counties generally, and in the "marshes" near the sea, one meets with grass-land that will feed a big bullock ripe fat without extra food; but such land is very scarce indeed.

And, I fancy, the recent fall in the price of beef and mutton in Britain will make farmers there hesitate, before they lay down much more land in grass. For, after all said and done, much as I long to see a fair extent of permanent pasture on every farm in the province, I can see clearly that many a man will be disappointed at first. Sow what seeds you will; treat them as liberally as you please with manure; roll and bush-harrow them, and consume the produce as judiciously as you can; the time will come—and on light soils it will come soon—when the so-called *perennial* plants will die out, and the natural grasses of the soil will take their place. After the third or fourth year, the pasture will begin to deteriorate, and it will not arrive at its best under thirty or forty years. Such as been my experience in England, and with our drier climate I cannot hold out hopes that things will be different here.

The yield of some of the newly seeded pastures mentioned in Mr. Brown's essay has certainly been wonderful.

Near Brockville, twenty acres were seeded down four years ago, and so profuse was the first year's growth that pasturing and haying had to be adopted in order to prevent smothering. The second year was pastured, when fully two head of cattle were kept per acre; during the third year twenty cows were grazed up to 11th July, when ten tons of first-class hay were harvested from one-half of the field, and, after the hay was removed, seventeen cattle were grazed for the remainder of the season, leaving the pasture with a much better bottom. The enterprising farmer in this example gave particular attention to the effect of the

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upon dairy products. He says:—"The milk produced was richer and of a peculiar flavour, having, directly after milking, a greasy appearance like oil on the top of water; the butter had also a peculiar flavour and a richer yellow colour;" the same effect was produced on the butter when cows were fed on the hay.

Not far from the same place a prominent public man seeded some forty acres, and he expressed his satisfaction to the professor in this way:—"If the farmers take advantage of what the Experimental Farm has shown can be done with permanent pasture alone, it has more than paid all its cost to the country for many years to come." "I am not aware exactly how the calculation was made, but probably somewhat in this manner:—The present cultivated pasture of Ontario maintains one cow on every three acres (it is really 3¼ acres), and as the average cow gives 3,800 lbs. of milk per grass season, the produce is 1,270 lbs. per acre per annum. As the permanent pasture in question can hold

MORE THAN ONE COW PER ACRE,

and enables the same cow to give one-fourth more milk, the acre produces 4,750 lbs. of milk every season. There being about 15,000,000 acres of arable land in Ontario, it results that if ten acres of permanent pasture were established to every one hundred acres, the 1,500,000 acres thus changed from the present stamp of pasture would actually give a cash difference of $25,000,000, or $250 a year to every farmer of the Province. The cash cost to the Province of the Ontario Agricultural College and Experimental Farm is about $20,000 a year. If this rough estimate is wide of the position taken by the gentleman referred to, I shall be glad to have it corrected, as his congratulations were hurriedly made in a railway car two years ago."

All the best grass-land farmers I know, in England, pasture their young seeds with yearling cattle, putting on a heavy stock at once, so as to feed it down close and level as quickly as possible, the great object being to persuade the roots to tiller out and thus form the thickest possible bottom in the shortest possible time. In whatever manner the growth may be consumed, it is of the greatest possible importance that not one plant should be allowed even to form, much less to ripen, its seed; the odds are that if it does it will die out.

At Stratford, it seems, 25 acres were laid down two years ago. "Twenty store cattle, yearlings and two-year olds were kept on these 25 acres, and they would have carried more. The land was newly cleared and had never been cropped. Here was a case of $15 of beef per acre per annum, as against the average of $5.25 from timothy and clover pasture."

Surely, a rather vague statement on the part of the farmer! I confess I do not see how the $15 per acre are arrived at. Were the cattle weighed before and after the season?

And again: "The dairy testing last year was a produce of 7,800 pounds of milk per acre, when ONE ACRE MAINTAINED TWO COWS ALL THE YEAR THROUGH—a result so apparently remarkable in comparison with the present provincial average of 1,300 pounds that comment stands still." Yes, I should think it did! For if 10 pounds of milk will give a pound of cheese—the usual calculation I believe—this one acre must have yielded 780 pounds of cheese, that is to say, 5.2 as much as yielded by an acre of the finest Glo'stershire cheese-land which lets for $11 an acre per annum; to say nothing of six dollars of tithe and rates!

"But," the professor goes on to say, "the conduct of this class of pasture has been very uniform and characteristic. On all hands the complaint has been that it has come so strong and profuse the first year, necessitating a kind of management contrary to the best practice of Europe. As an example of this, take the case of the four acres we seeded in May 1885, in preparation for the store steers of 1886. Growth became so rank that for the sake of giving air and a better chance to the roots, we ran the mower over in May, and left the cutting as a mulch. In June another cutting was considered necessary for the like objects; the mower was used for a third time during the summer, and finally, in September, fearing that the profuse growth might smother out some plants when winter came, we took off a crop of hay—the fourth cutting—that averaged 1¼ ton per acre. Thus, the same season the seeding was done, we had to cut four times, and could have pastured afterwards had it been consistent with good management."

Well, this proves that where land is properly prepared and a judicious selection of grass-seed sown without a grain crop, an enormous yield of grass or of hay may be expected. But this is not the question. What we want to know is: what will be the state of the pasture, say, twenty years hence? We all know that the yield of grass-land in Canada, when well treated, is equal, and perhaps superior to the yield of grass-land in Britain. I have certainly seen finer crops of clover and timothy in Quebec than I ever saw at home, but our permanent pastures are not good, and we want to know how to ensure their being good, and it is here that Mr. Brown really comes to our assistance. After remarking that, in the experience of the Experimental farm, timothy hay has the effect of drying up the flow of milk—wherein I entirely agree with him—and alluding to the necessity of winter-dairying, to which end he advises the Ontario farmer to secure the kind of meadow hay that has always helped to give Britain her winter milk, the professor enters upon the